

Calculation of the temperature and pressure drop along the HXTU

	HeI		HeII saturated		GHe superheated		HeII pressurized			GHe	
Point i	1	2	3 not used	4	5	6	7	8	9	10	11
Ti [K]	4.45	2.17 (est.) [2]		1.813	1.805	3.26	4.5	5	25	4.5 104 meas	10 123 meas
Pi [bar]	1.25	1.23		17.3	16.7	1E-3 [1]	1	1.1	1.1	1.25	1.25
DTi, i+1 [mK]	N/A	N/A		8	12 [3]	N/A	0.5	20 K	N/A	20 K	N/A
DPi, i+1 [mbar]	25	N/A		0.6	0.7 [3]	N/A	0	0	N/A	N/A	N/A
Comment		Yield = 0.88 [2]									

Note:

- The first row is for nominal conditions, the second is for ultimate conditions:
 Nominal: m(max)= 10 g/s
 Ultimate: m(max)= 18 g/s [1]
- The point names are given according to the drawing: PID_drop.dwg

References:

- [1] : Cern private talk (based on LHC-PR-213?)
- [2] : "A HE II heat exchanger test unit designed for the LHC interaction region magnets" - paper Montreal CEC '99
- [3] : EES worksheet from Tom Peterson